Ask the Experts: Oil Paint Tubes and Combustion

Ask the Experts: “If painting rags can catch fire all by themselves, can oil paint catch fire in the tube?”

A: Traditional oil paint in a capped tube does not present a combustion hazard like oil-soaked rags. Unlike solvents, regular oil paint in capped tubes does not have any special storage or transportation requirement regarding flammability.

Oil paint is made using vegetable oils (usually linseed oil, but sometimes also safflower, poppy or walnut). This type of paint in the tube doesn't give off flammable vapors or ignite easily, so tube oils are really no more dangerous than, say, a bottle of flax oil from the health food store. In fact, tightly capped oil paint in tubes is relatively heat-tolerant and can normally remain shelf stable when stored in a hot interior space in the summer, better than acrylics or watercolors.

The oils used in paint form a solid film by combining with oxygen. This process does generate a small amount of heat, but over a flat surface like the plane of a canvas, the heat disperses quickly and does not raise the temperature of the materials. Paint stored in tubes is almost completely isolated from air, so oxidation is all but eliminated. Paint that is deposited on a canvas or palette is mostly exposed to air on the top layer, so oxidation can only occur at a gradual rate (the speed at which paint dries).

The most serious risk of combustion with oil paint involves how it is cleaned up. Vegetable oils, including cooking oils, can create a combustion risk if they are cleaned up with rags, gloves, steel wool, or similar materials which provide a large surface area with high exposure to air. At the same time, rags, balled up gloves and steel wool act as insulators, especially when placed in piles. A large enough pile of oil-soaked rags can hold heat, which in turn accelerates oxidation, further increasing heat. This reaction can potentially generate temperatures high enough to self-ignite the materials.

While it is true that paint stored in tubes presents no risk of self-combustion, every artist needs to know how to safely dispose of rags used in painting and cleanup. A single paint-soaked rag can be spread out flat to dry, and a larger amount can be placed in a lidded metal container with water for daily disposal.

Above all else, make sure to read and observe package indications for product safety, including those for solvents, mediums and driers. Materials containing solvents or other ingredients that require special handling will have special labels indicating potential risks and requirements for handling and cleanup.

When driers or solvents have been mixed with oil paint, there can be an elevated need for safety precautions. Linseed oil that has been mixed into a medium with thinner, varnish or driers needs to be handled with consideration for the volatile or flammable ingredients added. Oil colors themselves, however, typically contain mostly pigment and a vegetable oil, along with some amendments in amounts so small, they don’t require labeling. As such, they can be stored and transported without any special concern for safety.